

## ABSTRACT OF THE DISCLOSURE

A microfluidic system for isolation and amplification of DNA or RNA from aqueous solutions and detection of the DNA or RNA on a lateral flow detection strip, including a disposable microfluidic card for use in analysis of bacteria in platelets and an analysis of sexually transmitted diseases (STD) in urine. The card will include an embedded membrane that filters out cells and cellular debris. Any biological debris on the membrane will be lysed and the DNA or RNA amplified via PCR amplification protocol, including appropriate reagents and thermal cycling conditions. The amplified DNA or RNA are transferred to a lateral flow detection strip for a visual diagnostic read out. An alternate embodiment includes a microfluidic card for use in typing antiglobulin assays.

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